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| 10/036,401 | 01/07/2002 | Mathias Bischoff | 4001-1003 | 3605 |
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| YOUNG & THOMPSON 745 SOUTH 23RD STREET 2ND FLOOR ARLINGTON, VA 22202 | | | CURS, NATHAN M | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2633 | |

DATE MAILED: 08/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|--|--|
| Office Action Summary | Application No. 10/036,401 | Applicant(s) BISCHOFF ET AL. | |
| | Examiner Nathan Curs | Art Unit 2633 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,6-17 is/are rejected.
- 7) ☒ Claim(s) 2-9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1, 3, 9 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, the applicant claims "a parameter (NRR, n)". It's not clear if the contents of the parentheses "(NRR, n)" indicates the parameter is two values or one value, i.e. it is not clear if the contents of the parentheses are intended to further limit "parameter" to mean one value or a pair of values, specifically in light of the "parameter" limitation of claim 2.

Regarding claims 1 and 11, the phrase "a third network device sends a signaling signal to a fourth network node device... for setting up a second data link" is confusing when read in light of the subsequent phrase where it is claimed that the fourth network node is responsible for setting up the second data link or not. The role of the signaling signal sent to the fourth node is not clearly defined if the signal sent to the fourth node is "for setting up a second data link" yet the fourth node may not set up the second data link.

Claim 3 recites the limitation "the fourth network node device (3)" as well as "the fourth network node device (2)". The values in the parentheses serve to confuse the limitation, since the values 2 and 3 are associated with the fourth and third devices, respectively, in claim 1. The claim was examined below assuming the limitation was intended to be "the third network node device (3)".

Regarding claim 9, the plural form used in the limitations "network node devices (4)" and "network node devices (3)" is confusing considering that the devices (4) and (3) are each a singular device in previous claims.

Claim Objections

3. Claims 2-9 are objected to because of the following informalities:

Claims 2-9 recite the limitation "optical communication network (8)"; however, the value in parentheses should be (20) not (8), to be consistent with claim 1.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-4, 6-10 and 14-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Nederlof (US Patent No. 5590118).

Regarding claims 1 and 17, Nederlof discloses an optical communication network and method (col. 8, lines 56-63) in which optical signals are exchanged via a first data link between a first network node device and a second network node device with interposition of a number of further interconnected network node devices (fig. 1, e.g. element SN4 communicating to element SN8 through elements SN6), characterized in that, after a disturbance on the first data link (col. 19, lines 41-43, failure of SN6), a third network node device (fig. 1, element SN5) sends a signaling signal to a fourth network node device connected to the third network node

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device for potentially setting up a second data link which would be at least partially a standby for the first data link (fig. 1, element SN7 and col. 19, lines 57-64, where the request message sent by SN5 to SN7 – as well as the request message sent by SN8 to SN7 – is for setting up a second data link bypassing SN6), which signaling signal contains a parameter determined by the third network node device (col. 10, lines 10-59 and col. 19, lines 44-50, where the parameter includes the IDA data in the request message indicating that the sender of the parameter has detected the failure) on the basis of which it is determined whether the fourth network node device is responsible for setting up the second data link or not (col. 19, lines 57-64, where SN7 becomes responsible for confirming the alternate route linking SN5 and SN8).

Regarding claim 2, Nederlof discloses the optical communication network as claimed in claim 1, in which the parameter contains information with respect to the distance between the third network node device and the second network node device (col. 10, lines 10-59, where the HOPCT value of the request message indicates the node distance between itself and the fourth node, related to a distance limitation, which is information with respect to the distance between the third node and second node in light of the HOPCT value also received from the second node, when the fourth node is responsible for confirming the alternate route).

Regarding claim 3, Nederlof discloses the optical communication network as claimed in claim 1, in which the distance between the fourth network node device and the second network node device is additionally taken into consideration in the determination as to whether the fourth network node device is responsible for setting up the second data link or not (col. 10, lines 10-59 and col. 19, lines 57-64, where the HOPCT value of the request message from the second node to the fourth node indicates the node distance between itself and the fourth node, and is related to a distance limitation, which the fourth node considers in confirming the alternate route).

Regarding claim 4, Nederlof discloses the optical communication network as claimed in claim 1, in which the distance between the fourth and the third network node device is additionally taken into consideration in the determination as to whether the fourth network node device is responsible for setting up the second data link or not (col. 10, lines 10-59 and col. 19, lines 57-64, where the HOPCT value of the request message from the third node to the fourth node indicates the node distance between itself and the fourth node, and is related to a distance limitation, which the fourth node considers in confirming the alternate route).

Regarding claim 6, Nederlof discloses the optical communication network as claimed in claim 1, in which one of the network node devices which is located on the path, used by the first data link, from the fault location in the direction of the network node device which has set up the first data link, is responsible for setting up the second data link (fig. 1, element SN5 and col. 19, lines 44-50, where SN5 sending the request message based on the failure detection indicates responsibility for SN5 in setting up the second data link).

Regarding claim 7, Nederlof discloses the optical communication network as claimed in claim 1, in which one of the network node devices which is located on the path, used by the first data link, from the fault location in the direction of the destination network node device of the first data link, is responsible for setting up the second data link (fig. 1, element SN8 and col. 19, lines 51-55, where SN8 sending the request message based on the failure detection indicates responsibility for SN8 in setting up the second data link).

Regarding claim 8, Nederlof discloses the optical communication network as claimed in claim 1, in which the parameter determined by the third network node device or a further parameter transmitted to the fourth network node device contains information on whether the third network node device has received a further signaling signal, corresponding to the signaling signal, from a further network node device connected to the third network node device (fig. 1,

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element SN5 and col. 10, lines 10-59 and col. 19, lines 44-50, where the IDA value of the request message indicates that SN5 has detected signal failure from SN6, which is connected to SN5).

Regarding claim 9, Nederlof discloses the optical communication network as claimed in claim 8, in which the parameter or the further parameter contains information on which number of further network node devices have sent to corresponding network node devices a further signaling signal corresponding to the signaling signal, the further network node devices being connected directly or indirectly to the third network node device (fig. 1, element SN5 and col. 10, lines 10-59 and col. 19, lines 44-50, where the IDB value of the request message indicates that SN8 is the node opposite the failure).

Regarding claim 10, Nederlof discloses the optical communication network as claimed in claim 9, in which the fourth network node device is responsible for setting up the second data link if the number corresponds to a predetermined number (col. 10, lines 10-59 and col. 19, lines 57-64, i.e. where the fourth network device is responsible for setting up the second data link if the HOPCT value received from SN8 – SN8 being the number indicated in IDB – corresponds to the predetermined HOPCT limit).

Regarding claim 14, Nederlof discloses the optical communication network as claimed in claim 1, in which the second data link extends wholly or partially via a different undisturbed path from the first data link (fig. 1, path SN5-SN6-SN8 versus SN5-SN7-SN8).

Regarding claim 15, Nederlof discloses a network node device which is designed and established in such a manner that it can be used as fourth network node device in an optical communication network as claimed in claim 1 (fig. 1, element SN7).

Regarding claim 16, Nederlof discloses a network node device which is designed and established in such a manner that it can be used as third network node device in an optical communication network as claimed in claim 1 (fig. 1, element SN5).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nederlof (US Patent No. 5590118) in view of Viterbi ("Approximate Analysis of Time-Synchronous Packet Networks"; Viterbi, A.; Selected Areas in Communications, IEEE Journal on; Vol 4, Issue 6, Sep 1986, Pages: 879-890).

Regarding claims 11-13, Nederlof discloses an optical communication network and method (col. 8, lines 56-63) in which optical signals are exchanged via a first data link between a first network node device and a second network node device with interposition of a number of further interconnected network node devices (fig. 1, e.g. element SN4 communicating to element SN8 through elements SN6), characterized in that, after a disturbance on the first data link (col. 19, lines 41-43, failure of SN6), a third network node device (fig. 1, element SN5) sends a signaling signal to a fourth network node device connected to the third network node device for potentially setting up a second data link which would be at least partially a standby for the first data link (fig. 1, element SN7 and col. 19, lines 57-64, where the request message sent by SN5 to SN7 – as well as the request message sent by SN8 to SN7 – is for setting up a second data link bypassing SN6). Nederlof discloses that the signaling signal is sent with a hop

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count limitation (col. 10, lines 50-59), but does not disclose that the fourth network node device determines whether it is responsible for setting up the second data link or not on the basis of a Bernoulli experiment, taking into consideration the number of links connected to the fourth network node device and the distance between the fourth network node device and a further network node device, particularly the first and/or second network node device. Viterbi discloses a Bernoulli experiment for a node of an arbitrary network topology, where packets are routed along the path of minimum hop count, for evaluating distributed processing and performance of the network as viewed from the fourth node; and the experiment considers the links connected to the node and the distance (hop count) between the node and other nodes (page 879, Abstract and Section 1, lines 1-8 and page 887, section D line 1 to page 888, section Conclusion, line 11, including Table 8 and fig. 9). It would have been obvious to one of ordinary skill in the art at the time of the invention for the fourth node of Nederlof to evaluate the network using the Bernoulli experiment taught by Viterbi before setting up a second data link, to provide the advantage of setting up the most efficient second data link when considering performance of the rest of the network as viewed from the fourth node.

Allowable Subject Matter

8. Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. These references disclose alternative conventional systems and methods for


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distributed restoration of transmission via an alternate route bypassing a failed link: US Patent No. 5812524, US Patent No. 5838600 and US Published Patent Application No. 2002/0021466 including the co-owned application incorporated by reference in the specification, titled "Method for Wavelength Switch Network Restoration".

10. Any inquiry concerning this communication from the examiner should be directed to N. Curs whose telephone number is (571) 272-3028. The examiner can normally be reached on M-F (from 9 AM to 5 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan, can be reached at (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (800) 786-9199.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://paired.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


M. R. SEDIGHIAN
PRIMARY EXAMINER